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ABSTRACT

This booklet covers the development of Unesco's General Information Program (PGI), which was created in 1977 to insure a coherent development of Unesco's work in the areas of scientific and technological information, documentation, libraries, and archives. A description of the history of the organization and its predecessors, the structure of the program, and methods of execution opens the report and is followed by a review of the organization's major results and achievements. The first area of accomplishment, presented under the heading, "Improvement of Access to Information: Modern Technologies, Standardization, and Interconnection of Information Systems," provides information in the following areas: (1) the development of tools for the processing and transfer of information, such as standards for information transfer, bibliographic control, and a system for the registration of serial publications; (2) the development and use of data bases through the application of modern technologies and normative tools; and (3) the exchange and flow of information through regional and international cooperation among member states and with the organizations of the United Nations system. The second area of accomplishment is described under the heading, "Infrastructures, Policies and Training Required for the Processing and Dissemination of Information." It contains information about the development of national information policies and infrastructures and the training of information personnel and users. Also included are brief descriptions of the organization's operational activities; human and financial resources; relationship of the program with other international agencies; results of evaluation efforts undertaken; and difficulties and shortfalls encountered. (KRN)

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A Compilation of Information on its Characteristics, Activities and Accomplishments

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General Information Programme and UNISIST

United Nations Educational, Scientific and Cultural Organization

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Prepared by
Kenneth H. Roberts

General Information Programme and UNISIST

United Nations Educational,
Scientific and Cultural Organization

Paris, September 1988

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General Information Programme

Historical background

Origins

The nineteenth session of Unesco's General Conference (1976) approved the creation of a General Information Programme in order to ensure a coherent development of Unesco's work in the areas of scientific and technological information, documentation, libraries and archives. This session of the Conference also established the Intergovernmental Council for the General Information Programme.

The UNISIST programme, launched by the General Conference in 1972 on the basis of recommendations made by an Intergovernmental Conference held in 1971, had been established as an intergovernmental programme to co-ordinate existing trends towards co-operation in the field of scientific and technical information—the ultimate goal being the establishment of a flexible and loosely-connected network of information systems and services based on voluntary co-operation. Execution of this programme was assigned to the Division of Scientific and Technological Information.

To focus some of Unesco's information programmes the Director-General had already established in 1966 a Department of Documentation, Libraries and Archives (DBA) which dealt with the development of information infrastructures. The recommendations of the Intergovernmental Conference on the Planning of National Documentation, Library and Archive Infrastructures (NATIS) organized by DBA in 1974 overlapped those of the 1971 UNISIST Conference and there was also some duplication in the successive programmes for the two units as approved by the General Conference.

After consultation with Member States on this problem and with the help of expert advisers, the Director-General had submitted to the General Conference a proposed solution (19 C/42) based on a merger of these programmes. The Conference endorsed this plan. To implement the new programme the Director-General created in February 1977 the Division of the General Information Programme (PGI).

PGI was formed concurrently with the launching of Unesco's first Medium-Term Plan 1977-1982. The main themes for a General Information Programme were identified by the General Conference in the framework of Objective 10.1, Development and Promotion of Information Systems and Services at the National, Regional and International Levels found in Chapter 10, Transfer and Exchange of Information, of this plan:

– Promotion of the formulation of information policies and plans (national, regional and international);

– Promotion and dissemination of methods, norms and standards for information handling;

– Contribution to the development of information infrastructures;

– Contribution to the development of specialized information systems in the fields of education, culture and communication, and the natural and social sciences;

– Promotion of the training and education of specialists in and users of information.

The actions planned in separate programmes by the former Division of Documentation, Libraries and Archives and the former Division of Scientific and Technological Information and approved by the General Conference were grouped under these themes drawn from the structure of the UNISIST programme (policy, standards, infrastructures and training). The Division of the General Information Programme was structured by sections corresponding to these themes and the task of shaping the varied components into a coherent programme began.

The retention of the name 'UNISIST' had been recommended by the General Conference 'for appropriate use'. Parallel to the concern of promoting international communication among scientists and engineers which remained a preoccupation of UNISIST there evolved, in response to the changing needs of Unesco's Member States an increasing emphasis on supporting activities in scientific and technological information to accelerate the development process. It also became more and more apparent during the 1970s that the principles on which the UNISIST programme was based were applicable to all fields of knowledge and not to the scientific and technological fields only.

The Intergovernmental Conference on Scientific and Technological Information for Development, UNISIST II, which gave full expression to these views was held in 1979. It was agreed that the recommendations of the 1971 conference were still relevant although social and economic conditions were changing.

Also largely integrated into the tissue of PGI were the NATIS concept and recommendations on the planning of overall national documentation, library and archives infrastructures adopted at the 1974 Conference even though the acronym 'NATIS' was dropped from Unesco usage.

Aims and objectives

The second Medium-Term Plan 1984-1989 which defined the conceptual framework, goals and action strategies of Unesco for three successive budgetary periods, 1984-1985, 1986-1987 and 1988-1989 was adopted by Unesco's General Conference in December 1982.

The object of 'Information systems and access to knowledge', one of the fourteen major programmes into which the plan is divided, has been to facilitate general access to information, to promote its free flow and to expand Member States' capacity to exchange, store and use the information needed for development. Particular emphasis has been laid on the development of the normative tools required for data processing, the application of new technologies and the strengthening of national, regional and international information systems and services and their interconnection.

It was recognized as the Medium-Term Plan was being developed that the General Information Programme, which covered most of Unesco's activities in the fields of information, libraries and archives – and of which UNISIST formed an integral part – provided an appropriate framework for undertaking the main tasks to be carried out. The major programme was both interdisciplinary and intersectoral, and applied to the natural and to the social and human sciences, as well as to the other branches of knowledge and to all sectors of human activity.

In this major programme the main themes of the first Medium-Term Plan were preserved, but the structure, lines of emphasis, and approach were different. As suggested by a broad spectrum of Member States at meetings and through questionnaires, changes from the earlier plan included: an insistence on information as a prerequisite for economic and social development; a strong emphasis on user-oriented systems and services and the problem of the under-utilization of information; a marked concern with questions related to new information technology; an increased emphasis on developing tertiary information sources, referral services and repackaging information to meet needs at every social level; an insistence on the importance of standardization and compatibility and an emphasis on interconnection, including that among units of the United Nations system.

The tasks to be carried out by PGI were grouped in programmes and subprogrammes:

VIII.1 Improvement of Access to Information: Modern Technologies, Standardization and Interconnection of Information Systems

VII.1.1 Development of tools for the processing and transfer of information

VII.1.2 Development and use of data bases through the application of modern technologies and normative tools

VII.1.3 Exchange and flow of information: regional and international co-operation among Member States and with the organizations of the United Nations system.

VII.2 Infrastructures, Policies and Training Required for the Processing and Dissemination of Specialized Information

VII.2.1 National information policies and infrastructures

VII.2.2 Training of information personnel and information users.

The organs of the programme

The General Conference in establishing an Intergovernmental Council for the General Information Programme assigned it responsibility for guiding the conception and planning of the programme, in particular by making recommendations on the content of the biennial programmes and budgets and the Medium-Term Plans, reviewing the results achieved, recommending priorities and encouraging the participation of Member States in the implementation of the programme. The Council is composed of 30 Member States of Unesco, elected by the General Conference. It elects a chairman, three vice-chairmen, a rapporteur and three other members. These form the Council's Bureau. The Council normally meets once during each budgetary period.

The execution of the programme is assigned to the Division of the General Information Programme which was first attached to the Directorate of Unesco. Since 1985 PGI has been placed under the General Programmes and Programme Support Sector.

Examples of advisory bodies for the programme are the Working Group on Methods, Norms and Standards and the Ad Hoc Committee on Education and Training Policy and Programme. The Advisory Committee provided for when PGI was established has not met since its first session in 1977, the Director-General having decided in view of the existence in PGI of specialized advisory groups, and taking into account also the advisory role of the Council and its Bureau not to convene it for the present.

Organization of activities

Structure of the programme

In approving the main lines of Major Programme VII, Information systems and access to knowledge, of the Medium-Term Plan the General Conference invited the Director-General to use its programmes and subprogrammes as a basis for planning the Organization's activities for the years 1984-1989. Since 1984 the thrust of PGI's programme has been as follows:

Programme VII.1, *Improvement of access to information: modern technologies, standardization and interconnection of information systems* contributes—by encouraging the creation and application of technical and normative methodologies and tools and the use of new data-processing and data-communication techniques, including the introduction of the appropriate software to the establishment of data bases and banks in various countries and regions and of compatible, interconneted information systems. Activities are organized within subprogrammes for the development, improvement and adaptation of technical and normative tools (VII.1.1), the application of these tools and new technologies in the framework of integrated pilot projects and the establishment of national as well as regional databases (VII.1.2), and the setting up of regional networks (VII.1.3).

Programme VII.2, *Infrastructures, policies and training required for the processing and dissemination of specialized information.* The establishment of data bases and regional information networks is only feasible given sound national infrastructures and a pool of qualified specialized personnel. Activities are organized within one subprogramme which promotes the establishment and consolidation of library, archive, documentation, analysis and referral services and numerical and bibliographic data banks (VII.2.1) and a second for the improvement of training programmes for information personnel and users (VII.2.2) so that all countries can make fuller use of the information available locally and take advantage of the resources of the various regional and international information systems and services.

The highest priority is given to activities relating to the development of information infrastructures and the training of information personnel and users. Activities aimed at promoting the formulation of policies and plans, promoting and disseminating methods and standards, encouraging the adoption of modern technologies and contributing to the development of specialized information systems are prerequisites for coherent action intended to facilitate the exchange and transfer of information. In respect of each programme, special attention is paid to the needs of information users and potential users, developing user-oriented information systems; the needs of the least developed countries; the importance of improving and encouraging the flow of and access to information, creativity and innovation; the production and use of local information; the applications of information technology and the need to evaluate the activities undertaken.

PGI is also responsible for the implementation in Member States of projects in its areas of responsibility financed by UNDP, Funds-in-Trust agreements, development banks and from other extra-budgetary sources. It executes projects which have been approved under Unesco's Participation Programme.

Methods of execution

PGI promotes, sponsors, organizes and supports meetings and workshops, education and training courses and seminars, pilot projects and consultancy missions, fellowships and equipment grants, research, studies and publications. A primary role is to serve as a catalyst by promoting and co-ordinating action to improve the provision and use of information throughout the world. It accomplishes this through consultation and collaboration with a variety of organizations including other Unesco programmes, Member States, the United Nations and its agencies, intergovernmental and non-governmental organizations and individual information specialists.

While the basic form of the programme has been determined by its governing bodies a variety of factors contribute to its continuous reshaping at the level of activities and help to ensure the relevance of the programme to evolving needs.

National Focal Points and National Information Committees for the General Information Programme are designated by governments to promote co-operation and co-ordination between all types of information services at the national level and strengthen the collaboration of the country with Unesco within the framework of the General Information Programme. By 1986 sixty Member States had designated focal points and fifty-one had set up national committees.

The points of view of individual Member States are communicated to Unesco through their focal points and national committees, through correspondence and contacts with permanent delegations. Staff missions to Member States provide insights which help shape activities that meet needs. Additional valuable comment is received in replies to formal questionnaires distributed to Member States. The long-time presence of a PGI staff member as Regional Adviser in Latin America and the Caribbean and the recent creation of a similar post in Asia reinforce contacts at national and regional levels.

The Intergovernmental Council of the General Information Programme is responsible for the planning and implementation of the programme. Influential recommendations have been formulated by Unesco's Executive Board and a full expression of the views of Member States occurs during the debates of the General Conference on the biennial programmes and budgets.

Also of importance to the shaping of programme activities are the discussions and debates of working groups, advisory committees, symposia and other groups of specialists. The valuable contributions to programme content and execution of international non-governmental professional organizations (NGOs) enjoying consultative status with Unesco are frequently referred to later.

Linkages of the programme

Within Unesco PGI promotes the application of the UNISIST normative tools in the development and running of Unesco's information and documentation systems and services in the fields of education, the natural and social sciences, culture and communication. The Intersectoral Committee for the Co-ordination of Activities in the Field of Information, chaired by PGI, was set up in 1977 to monitor Unesco's information activities and thus to allow for the harmonized planning and implementation of projects in this field. Active relations are maintained with regional offices of Unesco and the execution of a growing portion of PGI's activities is decentralized to regional level.

Co-operation with regional and international organizations contributes importantly to establishing co-operative regional networks for the processing, storage and exchange of scientific and technical information, most notably in Asia and Latin America. Unesco participates in the gradual establishment of the Global Network of Scientific and Technological Information recommended at the United Nations Conference on Science and Technology for Development (UNCSTD, Vienna, 1979) through co-operative projects with other United Nations agencies and through projects strengthening national information infrastructures. Co-operation with the organizations of the United Nations has encouraged the adoption by various information systems and services they maintain of the standards and methods developed and promoted their compatible development and interconnection.

It is characteristic of the programme that numerous activities, perhaps most frequently in the education and training area, are executed jointly with international, regional or national organizations or institutions, often with the assistance of Unesco's regional offices. This pooling of financial resources and technical expertise has greatly extended the reach of the programme and enriched its contribution.

Results of the activities of the General Information Programme

Review of major results and achievements

Introduction

The results of PGI activities during its first eleven years may best be analysed by using the programme structure adopted for the Medium-Term Plan 1984-1989. This necessitates considerable rearrangement of activities conducted in some parts of the programme during the first Medium-Term Plan period (1977-1983) but provides a clearer overall view of the thrusts and evolution of PGI's activities.

Deserving special emphasis at the outset because of its considerable influence on virtually all aspects of the programme over a period of time is the Intergovernmental Conference on Scientific and Technological Information for Development (UNISIST II), 1979. The Conference, attended by representatives of 91 Member States and the observers of 35 organizations, explored the role of scientific, technological and economic information in national socio-economic development and the related information requirements. It also emphasized the need to use the UNISIST framework in co-ordinating existing trends towards co-operation and in acting as a catalyst for development in information creation, organization, management and use. While confirming the value of the existing framework of Unesco's activities in the field, it added new elements – in particular a strategy centred on a wide variety of users and their needs.

In its endorsement of the recommendations of the UNISIST II Conference the Intergovernmental Council at its second session (1979) noted favourably the emphasis given at that Conference to the special requirements of developing countries, the need to include socio-economic information, a user-oriented approach and the wide range of users taking part in development, the need to facilitate selection, use and adaptation of advanced information and communication technologies, the importance of strengthening the role of Unesco in the United Nations system in the field of information and further improving UNISIST as a conceptual framework for information systems and services development in all subject fields.

In his report for the 1979-1980 biennium (22 C/3) the Director-General indicated, then, that 'Reflecting the views of Member States...' PGI would 'continue to seek ways to promote more effective use of information in social and economic development within the broadened framework of UNISIST while maintaining a balance between its information, library and archives activities'.

It may be noted that to guide and assess the planning and implementation of the General Information Programme, the Director-General convened between 1977 and 1986 six sessions of the Intergovernmental Council. Twelve meetings of its Bureau were organized. The Bureau has played an important role in guiding and monitoring the preparation and execution of certain major programme activities and in its performance of other tasks at the request of succeeding sessions of the Council.

VII.1 Improvement of Access to Information: Modern Technologies, Standardization and Interconnection of Information Systems

VII.1.1 Development of tools for the processing and transfer of information

The aim stated for this subprogramme in the Second Medium-Term Plan 1984-1989 is to develop, establish and make available the technical and normative tools required for the design and operation of compatible information systems and services. In 1984-1985 emphasis was placed on development of these tools, their application to operational systems and on the training of specialists from the developing countries in their use. In 1986-1987 the targets were to promote the continued development of tools, ensure their universal suitability and encourage their adoption; to reconcile bibliographic and technical standards relating to information; and to help establish national and international systems for the bibliographic and terminological control of information.

In the first Medium-Term Plan period (1977-1983) the closely related theme (5/10.1/02) 'Promotion and dissemination of methods, norms and standards' had set as principal programme aims—to improve the quality and efficiency of information services and transfer through improvement and more widespread acceptance of standards; to make available information on standards; and to ensure that Member States, particularly developing countries, will be able to benefit from available methods and standards for system development and implementation.

Formulation and application of standards

In the first years of PGI, information methods and standards were promoted and disseminated by production of the *ISO/Unesco Handbook on Information Transfer*. Because of their highly technical nature the widespread adoption and use of standards and guidelines required extensive sensitization and training efforts. Consequently PGI began a series of seminars of which early examples were the international ones held in Hungary in 1979 and 1980. An important achievement was the publication of the *UNISIST Guide to Standards for Information Handling* (1980) containing standards, rules, guidelines, directives and other documents of a normative character. During the 1981-1983 budgetary period a revised edition of the *ISO Standards Handbook, 1: Information Transfer* appeared and international, regional and national seminars on the application of standards were held in Hungary, the Philippines and Indonesia respectively. The International Organization for Standardization (ISO) produced, with support from PGI, handbooks on data processing hardware, software and vocabulary. In 1983 an important state-of-the-art review on compatibility issues appeared and PGI undertook a survey in Austria, Hungary, Portugal and Tanzania on the use of standards. The resulting study analysed the obstacles, needs and achievements identified and traced patterns suggesting areas for future action.

Efforts to replace or supplement the costly organization of seminars on standardization by the development of teaching and training materials for use in library and information schools began in 1984. For a Teaching Package on the Use of Information Handling Standards, three modules appeared in a preliminary version in 1986. Although in the long run teaching packages should permit economies, their publication is itself very costly and thorough testing and editing are essential prerequisites. All thirteen modules were tested in four Asian educational institutions during 1987. Other accomplishments since 1984 include the adoption by ISO as international standards of *Guidelines for the Establishment of Multilingual Thesauri* and *Indexing Principles*, both elaborated under PGI auspices. The document *Access to Normative Information* was published in co-operation with ISO. In co-ordinating Unesco's efforts with those of ISO, particular attention has been given to ensuring that the needs of developing countries are reflected by arranging for Unesco's participation in the work of all relevant ISO committees.

The Records and Archives Management Programme (RAMP), established in 1979 and described under subprogramme VII.2.1 has stressed harmonization of methods and development of guidelines and standards. Traditional policies and practices in these fields were based on diverse national traditions. A considerable number of publications introducing standardization have been warmly received. Perhaps the most wide-ranging is *The Applicability of UNISIST Guidelines and ISO International Standards to Archives*

Administration and Records Management (1982). Other examples treat the archival appraisal of machine-readable records and archival legislation and regulations. In order to provide data on archives for Unesco's *Statistical Yearbook* and to provide archival institutions a tool for programme planning, management and evaluation a Statistical Model for Archival Agencies and Records Centres was prepared in co-operation with the Office of Statistics of Unesco.

Bibliographic control

The International Congress on National Bibliographies held in 1977 was convened in co-operation with the International Federation of Library Associations and Institutions (IFLA) to discuss methods of improving the scope and coverage of national bibliographies and increasing their international exchange through standardization in order to meet the requirements of users for information in all physical forms and in different languages.

Soon thereafter at a regional seminar on this theme in Nigeria a Standing African Conference on Bibliographic Control (ASCOBIC) was set up. This has stimulated the introduction and application of standards in African countries, has helped identify concrete needs and provided expertise. Other early regional seminars on the theme were held in Tunisia, Senegal and Mexico. With the assistance of Unesco the International Federation for Information and Documentation (FID) published in 1978 the *Broad System of Ordering, Schedule and Index* as a switching mechanism for the transfer of blocks of information and data between centres. In 1979 FID and Unesco published a BSO manual to facilitate its application. In the same year appeared the *Guidelines for the National Bibliographic Agency and the National Bibliography* prepared within IFLA's UBC programme. During 1981-1983 the *Reference Manual for Machine-Readable Description of Research Projects and Institutions* and the second edition of the *Reference Manual for Machine-Readable Bibliographic Description* were published, the latter serving as a standardized communication format of particular use in the abstracting and indexing community. In co-operation with IFLA, guidelines for legal deposit legislation and for the compilation of union catalogues of serials, as well as the *ASCOBIC Manual on Bibliographic Control in Africa* and the *Manual on Bibliographic Control* were published. Further meetings of ASCOBIC were held in Gambia and Tanzania. To foster co-operation between the library and publishers communities Unesco supported in 1982 an IFLA-organized International Meeting on Cataloguing-in-Publication (CIP). This contributed to harmonizing existing national practices and encouraged other countries to set up standardized CIP programmes. Guidelines for CIP were issued in 1986.

In the framework of Unesco's second Medium-Term Plan efforts were concentrated on promoting the application of standards rather than on their elaboration. Among the activities supported were the fifth and sixth sessions of ASCOBIC. PGI sent consultants to various regions to lead national seminars and financed the participation of specialists from developing countries in relevant IFLA meetings. A third edition of the *Reference Manual for Machine-Readable Bibliographic Descriptions*, broadened for use in libraries as well as by abstracting services, appeared in 1986.

International Serials Data System (ISDS)

The International Centre for the Registration of Serials was set up in Paris in 1976 under an agreement between Unesco and the Government of the French Republic, to operate an automated system for the registration of serial publications known as the International Serials Data System (ISDS). This intergovernmental organization is set up under the UNISIST programme to provide a registry of the information required for the identification and bibliographic control of serials in all subject fields. The ISDS functions as a network of national and regional centres co-ordinated by the International Centre. By 1981 the network included 45 centres covering approximately 80% of world serial publications. At that time the machine-readable file maintained by the Centre contained some 90,000 records of serials and was growing by approximately 30,000 records per year. When China and India joined ISDS during the 1984-1985 biennium the system covered more than 90% of world production. Unesco helps additional Member States train national manpower and create ISDS centres.

Common Communication Format

The incompatible exchange formats used in libraries, abstracting services and information centres presented technical and economic barriers to national and international information exchange. Movements to resolve the lack of uniformity produced within the community of national libraries the UNIMARC format and within that of abstracting services the *UNISIST Reference Manual*. Other international formats designed for particular communities also emerged. The impracticality of mixing in a single file the records produced in different types of services hampered development of user-oriented information networks. A symposium convened in 1978 recommended creation of a Common Communication Format (CCF) suitable for use throughout the library and information community and a working group took up the task. The CCF was designed primarily for new users and those from developing countries who wished to access or contribute to data bases. Not intended for large, well-established services, the CCF was to provide a bridge and facilitate information exchange between information communities as well as between nations.

The CCF, first issued in English by Unesco in 1984, provides a detailed method for recording data elements in a computer-readable bibliographic record for exchange purposes. By 1986, the CCF had also appeared in French. The Chinese version was issued without Unesco assistance. Spanish and Arabic versions are in preparation. PGI prepared a manual and implementation notes for CCF users of specific cataloguing rules.

The application of the CCF in developing countries was promoted through the organization of consultant missions to Brazil, Colombia, Chile and Yugoslavia to adapt national exchange formats, prepare conversion programmes, lead national and regional seminars on exchange formats etc. Assistance was also arranged for UNCHS-Habitat (Nairobi) and for the International Bureau of Education (IBE), Geneva. Close contact is maintained with the Dag Hammarskjöld Library, United Nations and the European Community on matters concerning improvement of the CCF.

Terminology

The need to standardize proliferating terminological activities appeared early. The International Information Centre for Terminology (Infoterm), established in 1971 within the UNISIST framework and affiliated to the Austrian Standards Institute has maintained close co-operation with the ISO committee TC 37, Terminology (principles and co-ordination). The TermNet network, started in 1977, engaged in a set of programmes fostering international co-operation. First concentrating on development of infrastructure, it received modest assistance from Unesco. In more recent years TermNet has worked to improve co-operation in the preparation of terminologies and recording them in machine-readable form as well as in dissemination of data and information. The centre organizes meetings and training activities at which Unesco supports the participation of specialists from developing countries. Assistance was provided to the National Institute for Standardization and Industrial Property (INNORPI) in Tunisia for the organization in 1986 of a regional Arab Conference on Terminology and for a feasibility study on an Arab network on terminology. A terminology manual has been published.

VII.1.2 Development and use of data-bases through the application of modern technologies and normative tools

A separate subprogramme in this area was set up in the second Medium-Term Plan 1984-1989 with as objective to enable developing countries to create their own data-bases and have access to existing ones, so as to increase the exchange and flow of information. In 1984-1985 emphasis was placed on the adaptation and introduction in Member States of portable microcomputer software packages and on the launching of national and regional integrated projects in

which data-bases could be created for demonstration purposes. In 1986-1987 and 1988-1989 targets stress the consolidation and extension of the integrated projects.

Many Member States, attracted by the rapid growth of micro-informatics wished to establish computerized data bases. During the 1981-1983 biennium PGI undertook studies and a pilot project and convened a meeting on the theme. These activities identified options and procedures for providing suitable portable software. The *International Inventory of Software Packages in the Information Field* (1983) was well received and preparation of a second edition was undertaken. An international directory of suppliers of information handling equipment was published in 1985 by the International Referral Centre for Information Equipment (IRCIHE) in Zagreb, Yugoslavia.

As a number of packages were already available for use in systems based on mainframe and minicomputers, PGI focussed its efforts in 1984-1985 on portable software for microcomputer-based systems. More than twenty non-profit-making institutions in Latin America, Asia and Africa received a prototype version of the IV+V System Software Package which Austria offered to Unesco for use, free of charge, in developing countries. An additional thirty institutions were provided with Super Doc software, a user-friendly file management and information retrieval package. Institutions in Kenya, Senegal, Tanzania, Thailand and Venezuela were among those which received micro-computers and consultant services to aid data-base and networking development.

During 1986-1987 these efforts continued in nine projects in Asia, Latin America and Africa and five related seminars and workshops were offered for a total of 86 participants. Institutions using the new IV+V prototype package participated in a seminar (March 1986) to assess its effectiveness. It appeared that improvement was required before the software could be fully operational. Unesco then undertook to provide the package, for the time being, mainly for training/teaching purposes and the difficulties resulting from delay in completing the software were largely overcome by provision of other software. During the biennium the capabilities of Member States in computerized information systems were reinforced by the provision of software packages (including a new mini/micro version of the CDS/ISIS software, developed under the aegis of the former Division of the Unesco Library, Archives and Documentation Services (LAD)) to a further fifty institutions in developing countries and financing the participation of 22 specialists at international conferences and meetings on this subject.

An integrated project is expected to develop within an institution over a period of three to five years, a wide range of library, information and data services to meet the information needs of different categories of users within a sector or discipline. The successful service could become a node in a national or regional network where the procedures developed could be more widely

applied. An integrated project usually combines the use of modern information technology with conventional library and documentation practices. During 1984-1985 guidelines for such projects were disseminated and projects were set up in Trinidad, Goa (India), Bamako (Mali) and Damascus (Syria)—all in institutions of significant regional potential. In the next biennium a fifth project was set up in Venezuela. All of these are to be completed and evaluated during the 1988-1989 biennium.

VII.1.3 Exchange and flow of information: regional and international co-operation among Member States and with the organizations of the United Nations system

A subprogramme in this area was established in the second Medium-Term Plan with objectives of promoting the development of specialized regional information networks in co-operation with Member States, international and regional organizations and contributing to the harmonious development of compatible international information services and systems among the organizations of the United Nations system. During the first Medium-Term Plan period (1977-1983) such activities were undertaken principally in the framework of the themes devoted to policy and infrastructure.

Asia and the Pacific

Early efforts to reinforce regional information policy formulation and co-operation included two meetings in South and Central Asia and another in South-East Asia. Strong support for regional co-operation emerged at the Second Conference of Ministers Responsible for the Application of Science and Technology to Development (CASTASIA II), 1982 which proposed setting up a regional network devoted to the priority needs and interests of the region and making full use of existing systems and services. As follow up, the PGI programme for 1984-1985 provided for creation of a Regional Network for the Exchange of Information and Experience in Science and Technology in Asia and the Pacific (ASTINFO) which for full implementation would require extra-budgetary funding.

Among ASTINFO objectives are to strengthen bibliographic control and establish data bases; promote crossborder exchange of data and shared use of processing facilities; develop specialized information networks and SDI services; build up national infrastructures; develop access to international data bases; train information specialists and increase user awareness.

ASTINFO Consultative Meetings have been convened regularly to review implementation progress. During 1984-1985 seventeen Asian countries nominated National ASTINFO Co-ordinating Units and additional countries expressed interest in participating. Eighty Associated Centres were selected. Twelve regional seminars and courses were organized. Institutions in twelve

countries were assisted in developing their capacities for information handling and services, preparing local data bases and access to remote data bases.

ASTINFO activities were co-ordinaed, first by an associate expert (Denmark) and starting in 1986-1987, by a PGI regional adviser based at Unesco's office in Bangkok.

During 1986-1987 nine regional seminars and workshops—including one on the formulation of national information policies in ASTINFO member countries (Colombo, 1986)—and 14 national seminars and courses were held for a total of 672 participants. In addition the participation of specialists in international and regional meetings was financed. Consultant missions took place in five countries; fellowships were awarded to train two future teachers. The Asia and Pacific Information Network on Medicinal and Aromatic Plants (APINMAP), an operational subnetwork of ASTINFO, was launched in consultation with the scientific communities concerned. Four countries received microcomputers and CD-ROM readers. Six issues of a newsletter were distributed. Associated ASTINFO networks such as APINMAP and that for new and renewable energy sources (INNERTAP) have forged solid links with related networks. The co-operation of Unesco regional offices and the programme sectors, especially the Science Sector, has contributed importantly to network development.

Latin America and the Caribbean

A PGI regional adviser, serving since 1978, has been based in Unesco regional offices, first in Havana, and from 1981 in Caracas. Growing economic pressures and developments in the information environment stimulated the convening during the 1970s of meetings urging regional co-operation and resource sharing. The need for a Caribbean information system to support development was identified at a meeting sponsored by the Economic Commission for Latin America (ECLA) and Unesco (Trinidad and Tobago, 1977). During 1978 the role of the Spanish language in development of systems and services was assessed at REUNIBER, organized in Spain with Unesco support. Unesco convened in Peru (1979) a meeting on regional co-operation in information policy and planning. A feasibility study on a Central American network was prepared and a regional seminar (Mexico, 1979) discussed information transfer techniques. Another seminar was held to develop strategies for information systems and services (Colombia, 1979). An inter-organization consultation was held in Costa Rica (1980) to foster improved co-operation among organizations and Member States. Only a few of the recommendations of these meetings could be implemented and a mood of some scepticism emerged.

A new optic based on increased institutional commitment grew out of meetings convened by PGI in Santiago (1981) and Caracas (1982), the latter

attended by representatives of 16 regional and international organizations and six national co-ordinating bodies. The possibility for co-operative work seemed greatest in the areas of education and training, developing infrastructures and planning information policies and activities. In follow-up a working group composed of representatives of six organizations and Unesco met in Caracas in 1983 to develop strategy. A new approach based on the implementation of projects judged to benefit the region as a whole was agreed on. Systematic consultation preceded formulation of a programme to strengthen national capacities in information handling and to promote information flow. A regional meeting, convened by Unesco and ECLAC (Santiago, 1986) agreed on short and medium-term action in the areas of management, data base problems, information use and training with potential for attracting extra-budgetary funding.

In the Caribbean area PGI, in co-operation with regional organizations, had initiated in 1980 a long-term project for co-ordinated national information systems aimed at strengthening national capabilities and co-operation among countries. In this framework work was undertaken on estimating manpower needs and the needs and resources in computerized documentation were surveyed. A newsletter was issued. As a follow-up to a meeting of the Ministers of Science and Technology of the Caribbean area, and with the help of extra-budgetary funds, this project was reoriented in 1984. It was concentrated on establishing a network for scientific and technical information for the Caribbean (CARSTIN) intended to build up STI infrastructures; create a framework for information exchange; and enhance capacity for the handling and use of STI.

In this framework several missions were carried out during 1984-1985 to advise on national plans. A feasibility study for the establishment of a regional processing centre was carried out. Consultative meetings for the project were held to monitor progress and recommend future action. During 1986-1987, often within the framework of the regional networks, 209 participants attended training courses and study tours treating the use of CDS/ISIS (micro version). Six additional seminars were organized for 177 participants and ten consultants were provided on various aspects of system design and development. A large proportion of these activities were administered at regional level in co-operation with regional offices as part of PGI's increasing decentralization.

Africa

A UNISIST meeting on regional information policy and planning in West Africa was convened in Ghana in 1978. The need for increasing self-reliance among States and accelerating capabilities in development led the Economic Commission for Africa (UNECA) to set up a Pan-African Documentation and

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Information System (PADIS) in 1980. Unesco has been associated with this effort to provide ready access to information required for development. In connection with the establishment of PADIS and its subregional centres, and at the request of the Government of Zimbabwe, Unesco in 1982 aided the development of plans for a regional information network (SADIS) serving nine countries in southern Africa belonging to the Southern African Development Co-ordination Conference (SADCC). During 1983 PGI participated in the planning and execution of a feasibility study and in the preparation of a project document.Pursuing its co-operation with these countries Unesco convened a meeting in Tanzania (1985) on resource sharing within the Southern and Central African region. It was considered that after initial co-ordination of information activities at the national level, training and acquisition of materials would be the most promising short-term areas for resource sharing. In pursuit of the recommendations, information policy seminars based on national surveys were organized in Botswana, Malawi, Zambia and Zimbabwe during 1986 and 1987.

Arab States

An expert meeting on the development of scientific and technological information systems in the Arab countries was held in Paris in December 1978. Under the Arab League Documentation Centre (ALDOC) project in Tunis, financed by UNDP, a mission in 1984 evaluated project achievements and planned future activities. The Centre could play a co-ordinating role in the Arab region within the framework of an Arab League Information System. In 1987 a regional seminar on national information policies favoured setting up harmonized national information programmes permitting resource sharing at the regional level in the context of the Arab Information System Network (ARISNET).

Co-operation with organizations of the United Nations system

General questions of the relationship of the programme with the United Nations system are discussed later and the numerous activities in regional co-operation, infrastructure building or training with which members of the United Nations family have been associated are not regrouped here. Mentioned are representative activities included in Unesco's planned programme which originated as requests or suggestions of United Nations bodies.

In 1977 and 1979 Unesco-sponsored meetings of archivists and records managers of United Nations agencies were held to study records problems and to develop methods for improving administrative services to their respective agencies. A project was initiated in 1977 for production of a multipart guide to the archives of the United Nations and other international organizations. The

first to appear was *A Guide to the Archives of International Organizations I. The United Nations* (1984), the first intensive review of these resources.

In 1979, at the request of the United Nations Environment Programme (UNEP), Unesco provided financial and technical support for the evaluation of the INFOTERRA international referral system of UNEP and also assisted later with follow-up activities, especially in the training area. As mentioned earlier, financial and technical support was provided, starting in 1979, to the development of a Pan African Information System for Economic and Social Development (PADIS) under the aegis of the Economic Commission for Africa.

Analytical case-studies on the provision and use of STI were organized in eight countries in 1981 with financing from the Interim Fund for Science and Technology for Development (IFSTD) created after the UNCSTD Conference (Vienna, 1979). The studies revealed a strikingly low use of domestically produced information for national development purposes.

As a contribution to the implementation of the Global Network of Scientific and Technical Information recommended at UNCSTD, Unesco launched in 1984 a pilot national node project at the Fundo Colombiano de Investigaciones Científicas (COLCIENCIAS). With the help of equipment and technical training provided by Unesco, COLCIENCIAS set up data bases on STI sources in Colombia, elaborated an exchange format based on Unesco's CCF and analysed the access to and use made of documentation produced by the United Nations system. The results were presented in 1985 to a national meeting.

Co-operation with non-governmental organizations

Co-operation has been maintained with the international non-governmental organizations, *inter alia*, through the granting of subventions to the International Federation for Information and Documentation (FID), the International Federation of Library Associations and Institutions (IFLA) and the International Council on Archives (ICA). Many of the important contributions of these and other non-governmental organizations to the planning and execution of PGI activities are cited in appropriate contexts.

Harmonization of the specialized information services of Unesco

Since the creation of PGI much co-ordination is achieved through informal contact with various sectors and the framework of UNISIST contributed to the conception and development of such sectoral information services as ARKISYST and DARE.

The Executive Board of Unesco, after reviewing the results of UNCSTD, agreed in 1979 that Unesco, through its PGI, should undertake a preliminary

study of an international information system on new and renewable sources of energy. The study was approved by the General Conference at its twenty-first session and formed the basis of an action programme entrusted by the Director-General to the Science Sector. PGI continued to collaborate in its implementation and gave technical support as required.

The harmonization of the conception and implementation of the specialized information systems set up under Unesco's major programmes and the co-ordination of all of Unesco's information activities is formally undertaken through an Intersectoral Committee for Co-ordination of Activities in the Field of Information which has been chaired by PGI.

VII.2 Infrastructures, Policies and Training Required for the Processing and Dissemination of Information

VII.2.1 National information policies and infrastructures

The objectives of this subprogramme of the Medium-Term Plan 1984-1989 are to help Member States set up national information systems and to improve their components (libraries, archives, documentary services, etc.), to expand their capacity to co-ordinate activities in specialized information and to formulate development policies and plans in this field. During 1984-1985 emphasis was placed on availability of publications and on availability and use of archival information as well as conservation and restoration. Information analysis and repackaging and numerical data-banks were other priorities. In 1986-1987 targets included stimulation of the formulation of information policies and plans as well as co-ordination of national information systems, the flow of information for research and development and information resource sharing.

Within the first Medium-Term Plan (1977-1983) the areas of policy and infrastructure were the objects of two themes. The first, 'Promotion of the formulation of information policies and plans at the national, regional and international levels' (5/10.1/01) aimed to encourage the formulation of policy and the incorporation of information in development plans by increasing awareness of information as a resource; to promote planning for improved infrastructures and specialized information systems; and to promote information exchange. The second, 'Contribution to the development of information infrastructures' (5/10.1/03) aimed to provide Member States with better access to national, regional and international information resources to support social and economic development and to improve information transfer through the development of information infrastructures; to improve the capacity of less-developed countries to become full partners in the information transfer chain and to increase the effectiveness and will to co-operate of the numerous components of that chain.

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Support to Member States in the formulation of national information policies

Seminars were organized for representatives of National Focal Points on management of information resources (1977), on the impact of modern technology on information policy (1979), and on information for problem solving in socio-economic development (1980). The relationship with policy formulation was stressed in each. The need to base policy and planning on national priorities for social and economic development and on surveys of existing information facilities slowly gained wider recognition. Guidelines were tested in four pilot surveys (1977-1978). National seminars on the theme were organized in Iran (1977) and Peru (1980); draft guidelines and studies were prepared. Member States were encouraged to broaden the coverage of focal points and national committees, established within UNISIST for scientific and technical information, to encompass the full range of information services dealt with by PGI. By the end of 1978 the number of focal points had risen from 49 to 53 while that of national committees rose from 33 to 44. By 1986 these were respectively 60 and 51.

To encourage better use of existing information sources, surveys were undertaken and the results analysed in national seminars on information policy and plans in Panama (1983), Ethiopia and Malaysia (1984). An International Seminar on National Information Policy (Yugoslavia, 1984) used as a working paper a draft of consolidated guidelines on information policy which was subsequently revised and published as *Guidelines on National Information Policies: Scope, Formulation and Implementation* (1985). During 1986-1987 a total of 14 national seminars on national information policy were supported. These dealt with the elaboration of draft legislation covering national information activities. Extensive surveys were undertaken in five countries.

Promotion activities of the General Information Programme

In 1979 the *Unesco Bulletin for Libraries*, begun, in 1947, was succeeded by the quarterly *Unesco Journal of Information Science, Librarianship and Archives Administration* (UJISLAA), published in five languages, which reflected and promoted the objectives of PGI's programme. As from 1979 the ongoing *Bibliography, Documentation, Terminology* and the *UNISIST Newsletter* were combined and named the *General Information Programme–UNISIST Newsletter*. This covered PGI activities and the relevant information activities of organizations of the United Nations system and of international non-governmental organizations. Since 1984 this has appeared in Arabic as well as in English, French, Spanish and Russian. Because of budgetary constraints the General Conference decided with regret at its twenty-second session (1983) to discontinue publication of UJISLAA. Successive editions of *Bibliographic Services Throughout the World* (1975-1979; 1981-1982) have appeared.

Editions of a brochure describing PGI were issued in 1982 and 1984, the latter, by 1986, in six languages. A portable exhibit to promote PGI activities was prepared (1982). The distribution of an audiovisual information package on the programme was begun in 1985. A list of PGI documents and publications, 1977-1983 was published in 1985 and a supplement for 1984-1986 appeared in 1987. A steadily increasing number of requests for these documents is received. By 1984 these averaged more than 1,000 per month. This is in addition to the systematic distribution of documents as issued to focal points and national committees as well as to selected organizations, institutions and experts. Problems have arisen in handling this volume of work from Headquarters. Experimentation in various regions with decentralizing this distribution is furthest advanced in Latin America. In recent years production of PGI's documents has often been delayed due to the heavy workload of the Bureau of Conferences, Languages and Documents (COL) and the budgetary constraints which prevent contracting the work to outside printers or publishers.

Assistance to Member States for development of library and information services and for improvement of the access of users to information

Between 1977 and 1980 guidelines on evaluating information services and systems, conducting user studies and developing referral centres and core lists of scientific journals were published. A major study on information systems and networks for technology transfer appeared (1978). Five national case-studies on the application of STI in development were discussed at a meeting in India (1978) and a seminar on the information needs of engineers was organized in Indonesia (1979). Twenty-five advisory missions to developing countries were organized on aspects of infrastructure.

The International Congress on the Universal Availability of Publications (UAP) was organized in 1982 in collaboration with IFLA. The Congress, attended by participants from 64 Member States and numerous observers, identified constraints to access to publications and aimed to encourage national and international action by formulating the broad bases of a UAP programme covering problems of access, production and supply, acquisition, repositories and interlending. Significant publications in this area include those offering comparative studies and possible models for national interlending systems (1980) and national acquisition policies and systems (1982).

Activities devoted to promoting UAP continued during the 1984 to 1987 period. Regional seminars were organized in Chile, Kenya, India and Saint Lucia and national seminars took place in China, Senegal, Thailand and Tunisia. A pilot project in Senegal improved access to publications in that country. A number of studies were produced. Consultant missions, some

related to UAP and others in areas including preservation and conservation and introduction of modern technology were organized.

Assistance for national, university, research, school and public libraries

Directors of national libraries in Asia and Oceania met in Australia (1979), Japan (1982) and Sri Lanka (1985) to discuss resource sharing.

In 1978 a pilot project on the extension of university library services to outside users was undertaken in Malaysia and a seminar on the role of university libraries in the information systems of developing countries was organized in Dakar in co-operation with the Association des universités partiellement ou entièrement de langue française (AUPELF). The establishment of a co-ordinating centre for West African university libraries was studied in 1985 at a meeting organized with AUPELF. Follow-up during 1986 included work on a union catalogue, a directory of theses and an equipment survey.

In co-operation with La Documentation française a pilot project in mechanization of a documentation service took place in Tunisia during the first years of PGI. In 1985 a feasibility study was conducted in Cameroon on the creation of a documentation centre on African women. Subsequent assistance in the form of study grants and consultations has fostered the establishment of the centre.

In the area of school libraries a study was published on instructional materials on library use for schoolchildren, and guidelines for organizing school library media centres were issued in 1978. A handbook on library service to schools and children appeared in 1979. A pilot project to promote the development of school libraries in the South Pacific region, begun in 1980, stressed sensitizing school librarians and teachers to the importance of information use in education as well as training in the organization of libraries by the production of teaching materials. Actual training began in 1983 using classroom and distance teaching techniques supported by satellite channels. Efforts to sensitize those responsible for primary and secondary education to project aims continued during 1987. Financial assistance was given for a seminar in Spain on children's libraries within the framework of International Youth Year. Training courses on the organization of primary school libraries, offered during 1986 and 1987 in Malawi and Kenya, were early actions in an African school libraries project.

Pilot projects for the establishment of public library networks were conducted in Benin and Seychelles. In Benin rural libraries were shown to contribute to lifelong education and post-literacy programmes. An evaluation mission to Seychelles (1980) found library resources for young people and service to remote areas substantially increased. An African regional seminar on library services for the blind was organized in 1980 in co-operation with

IFLA. In 1982 a meeting on development of public library services in Latin America and the Caribbean (Caracas) identified the major obstacles and suggested remedial action. This was organized by the Regional Centre for Book Development in Latin America and the Caribbean (CERLAL), the Instituto Autónomo, Biblioteca Nacional y Servicios de Bibliotecas de Venezuela (IABN), IFLA and Unesco. A manual on developing public library systems and services was published in 1983. During 1986-1987 public and community information services in Latin America were promoted through issue of a manual and the establishment in Caracas of a data base on community information.

Records and archives management programme (RAMP) and related archives infrastructure development

During the period 1977-1980 a pilot project in archives administration was conducted in Costa Rica and assistance was provided to Kenya and Lebanon for the development of national archival services. A plan for Unesco action for the transfer of documents from archival repositories on the territory of certain countries to repositories in the country of their origin, prepared during 1977-1978, was approved by the General Conference. Subsequently a pilot project was conducted in Burundi and assistance provided to several countries for the acquisition of microform copies. Studies were published on setting up a data base of such material, on the preparation of model agreements and on the feasibility of creating an international microfilm fund. In related action assistance was given to regional organizations to facilitate access to materials for Balkan and Mediterranean studies.

A major development within PGI was the creation in 1979 in co-operation with the International Council on Archives (ICA) of a long-term Records and Archives Management Programme (RAMP). This created an improved focus for activities in the archives field, promoted the development of archives and record management systems and augmented their contribution to the development process. The pilot projects creating archival networks in regions of Indonesia and the Philippines and modern records management in Peru were evaluated as successful at regional seminars (1983). Training centres in document restoration and reprography were set up in Sudan and Argentina in 1980. Because archival systems and services traditionally developed within varying national administrative and record-keeping traditions, the RAMP programme emphasized the importance of standards, guidelines and harmonized training as prerequisites to regional and international co-operation. This long-term programme for standards, guidelines and other studies, prepared in 1979, was executed in appropriate PGI units, most often that for methods and standards. By the end of 1983 38 publications had appeared. Many dealt with appraisal and retention of various physical forms of records including motion

pictures and machine-readable records, and with preservation and restoration. One study discussed the role of archives in national information systems.

Between 1984 and 1987 missions on modernizing traditional archives were organized in several Latin American countries. A national course in Brazil, a subregional meeting in Zaire and a conservation seminar in India were held. RAMP studies and guidelines continued to appear. These included *Archives, Oral History and Oral Tradition* (1986). ICA was aided with its organization of microfilming operations in Bangladesh, India, Malaysia, Philippines and Sri Lanka. The report of an international inquiry into the current state of preservation and conservation of the world's library and archival patrimony, conducted jointly by ICA and IFLA (1987), identified priority problems and formulated recommendations. Another international study on the introduction of machine-readable documents in the archives of developing countries, conducted by ICA (published 1987), led to the establishment in 1987 of pilot projects in Mexico and Zimbabwe. Further pilot projects on archival networking were undertaken during 1987 in Kenya and Zambia. In the same year South-South co-operation on improving current records management practices in government agencies was fostered by visits of specialists and regional seminars on modernization and on conservation of archives were held in Brazil and Sri Lanka. Meetings where the progress made and the problems encountered by RAMP were reviewed and suggestions for future activities formulated took place in 1982 and 1986.

Promotion of data services and other specialized information services

Activities in this category have aimed at encouraging the improvement of specialized information handling techniques of particular relevance to the development process. The Science Sector has contributed to the financing and planning of a number of them.

Factual and numerical data

During the period 1977-1980, in co-operation with the Committee on Data of the International Council of Scientific Unions (ICSU/CODATA) pilot activities of the World Data Referral Center were supported. International and regional courses in data dissemination were organized in Japan and the Philippines. An international exchange format for numeric data was developed and a source book on data handling in science and technology was published. The recommendations of a meeting on data provision for development (1981) influenced the planning of later activities. *An Inventory of Data Sources in Science and Technology*, published in 1982, and updated by

CODATA in 1984 emphasized fields in which users in developing countries most frequently require data. Among training activities were courses on non-bibliographic data in Stockholm (1983) and Rabat (1984) and a workshop on earth sciences data (Kuwait, 1987). Guidelines for the organization of courses on dissemination of scientific data appeared in 1986. Significant recent pilot projects include that for factual and bibliographical data at the National Institute of Oceanography in Goa, India, and those in Sri Lanka on data services for subnational planning and administration (ESCAP-Unesco project) and in Argentina on statistical data services in agriculture. Assistance was provided to Sudan for development of an environmental information system. Guidelines on integrated data-banks holding natural resources and socio-economic data were prepared, as was a training kit for users and promoters of socio-economic and administrative information systems. A seminar for Asia on information systems for subnational development planning was organized in 1985, with a view to promoting a programme of regional co-operation in this area.

Information on research in progress

An inventory of information services on research in progress was published in 1980 (second edition, 1982). A pilot project in this field, finished in 1984, was conducted in Sudan. Regional seminars were organized in 1986 in Asia and in Latin America where regional inventories were also made. Improved guidelines for national information systems on research in progress were prepared.

The International Information System on Research in Documentation (ISORID), established by Unesco in co-operation with FID, collects, organizes and diffuses information on research and development in the fields of information, documentation, libraries and archives. In 1980 FID published a directory of institutions and individuals active in the field as a supplement to its periodic bulletin, *R&D Projects in Documentation and Librarianship*. This regularly diffuses information about the research activities identified. At its fifth session (1984) the Intergovernmental Council decided that to increase the effectiveness of ISORID and avoid duplication of effort, FID should assume increased responsibility. Since then, FID has handled its operational aspects.

Specialized information services (analysis, consolidation, etc.)

In 1978 a pilot data base was organized at a Nigerian university as a basis for selective dissemination of information services. In the same year an international seminar on this kind of service was held and guidelines for their establishment and evaluation, based on the results of projects in Argentina, India and Mexico, were issued.

Problems of consolidation of information were studied at a meeting (Sri Lanka, 1978). This led to a pilot project in India on the development of these techniques. In co-operation with the Tata Energy Research Institute consolidated information material on topics including windmills, solar energy and biogas was produced. *Consolidation of Information: A Handbook...* was published in 1981. A project in India (1986-1987) repackaged information on new and renewable energies in audiovisual forms for use at the grass-roots level. *A Course in Information Consolidation: A Handbook for Education and Training in Analysis, Synthesis and Repackaging of Information* appeared in 1986.

A methodology for identifying the information needs of engineers was devised in co-operation with the World Federation of Engineering Organizations (WFEO) and tested in 1983 by national associations in three countries. A pilot project on information for research, higher education and university-industry co-operation was conducted in Kenya with the co-operation of the International Centre for Chemical Studies, Llubjana, Yugoslavia.

VII.2.2 Training of information personnel and users

The aims of this subprogramme of the 1984-1989 plan are to contribute to the elaboration of plans for theoretical and practical training in Member States and the creation of appropriate training materials; the organization of basic courses and international programmes aimed particularly at teachers, managers of information services and specialists; and the stimulation and orientation of training for users. For 1984-1985 and 1986-1987 expected results were the preparation of specialized personnel through new or improved institutions and programmes; updating the knowledge of teachers, managers and specialists; dissemination of the teaching packages, textbooks and curricula prepared; preparation of model user training materials, in particular of those for use in educational institutions; and improved harmonization of programmes in information science, librarianship and archives management. While the training of information personnel and users is itself the subject of this subprogramme, additional training needs are identified throughout Major Programme VII.

The first Medium-Term Plan period (1977-1983) contained a similar theme (5/10.1/05), 'Promotion of the training and education of specialists in and users of information', which had among its aims to build up, in developing countries, the national or regional facilities needed for the education and training of the necessary information manpower; to promote training for the managers, teachers and information specialists needed to staff national information systems, services and schools; and to promote the education of user groups for more effective utilization of information resources.

Planning and harmonization of activities in the field of theoretical and practical training for information personnel

The Ad Hoc Committee on Education and Training Policy and Programme met three times during PGI's first eleven years to review programme execution and advise on developing policy, plans and strategy. The Committee was convened once again in January 1988. Activities contributing to harmonization and co-ordination conducted between 1977 and 1980 included: a symposium of heads of African schools of librarianship, documentation and archival studies (Ibadan, 1978), regional symposia on archival training needs in Arab countries (Sudan, 1978) and in Asia (Sri Lanka, 1978), an expert meeting on the harmonization of archival training programmes (Paris, 1979) and support to the IFLA pre-conference seminar on library education (Manila, 1980). At a meeting of sponsors of international assistance programmes in education and training of information personnel (Paris, 1978), with participants from United Nations agencies, other international organizations, foundations and national assistance programmes, a consensus emerged that Unesco should play a leading role in harmonization efforts in education and training and also in improving mechanisms for the flow of information about available training opportunities. A Latin American symposium of trainers and planners, held in Costa Rica in 1981, analysed problems impeding training and recruitment of information personnel in the region and prepared a plan for remedial action.

An international symposium on harmonization of education and training programmes (1984), reviewed progress made since the 1979 meeting on archival education, in particular the joint efforts of FID, ICA and IFLA, and formulated an action plan in the areas of curriculum, teaching materials, continuing education and teacher training. The application of a harmonized approach to professional education has advanced since the symposium, particularly in the developing countries, and the further progress made was reviewed at an international seminar convened in London (1987). Related promotion activities include distribution of a brochure. After studying a paper analysing the professional education programmes offered at Unesco projects in China, the Philippines, Morocco, Nigeria and Venezuela as well as in a number of developed countries, participants at a regional seminar on curriculum in information studies (Bangkok, 1985) devised a curriculum to meet the emerging challenges of information work in the Asian region.

Supplying information and data on education and training activities – including sources of finance and fellowships – has been a continuing preoccupation. Major activities in this area included a quarterly *Newsletter on Education and Training for Information Personnel*, begun in 1977 and an International Clearinghouse on Information Education and Training Materials, set up in 1980, both under contract with FID. Directories of opportunities and institutions are the *World Guide to Library Schools and Training Courses*

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in Documentation, second edition 1981, and editions of a trilingual *Register of Education and Training Activities in Librarianship, Information Science and Archives* (1982 and 1984), the latter also prepared under a contract with FID. Preparatory work, in co-operation with IFLA, started in 1984 on a third edition of the *World Guide*. Budgetary constraints forced discontinuation of support to the *Newsletter* and the Clearinghouse from 1986.

Establishment and development of national and regional training programmes in the field of information

To help plan national and regional training facilities, to assist in evaluation and revision of programmes and to teach special subjects, 19 consultant missions were provided to Member States during the 1977-1980 period. Between 1981 and 1983, consultants were sent to Benin, the Caribbean, Chile, Indonesia, Jamaica, Kenya, Senegal, Tunisia and Zimbabwe. Regional and national programmes aided by UNDP, notably the regional course for science information specialists at the University of the Philippines, received assistance for insufficiently funded programme elements like curriculum and staff development. In 1983 Unesco and the International Development Research Centre (IDRC) sent a joint mission to six African countries to explore the need for a programme in information science and the capacity of the institutions visited to undertake it. The mission recommended locating one programme for West Africa at the Univesity of Ibadan (Nigeria) and a second for Eastern and Southern Africa at the University of Addis Ababa (Ethiopia). Preparatory activities for both programmes, in staff and curriculum development, began in 1984 with financing from Unesco and IDRC. From 1984 onwards assistance to a limited number of regional programmes became a major focus for activities under this action. Other postgraduate programmes in information studies benefiting from this assistance were those at Simon Bolivar University, Caracas (Venezuela) and at the Institute for Scientific and Technical Information of China (ISTIC), Beijing. UNDP and the British Council were important partners in starting both these programmes. Other activities were undertaken between 1984 and 1987 in Belize, Burkina Faso, Chile, Colombia, Jamaica, Mexico, Mozambique, Pakistan and Tunisia.

The need for tools to conduct manpower surveys had been frequently cited. A methodology, tested in the Caribbean and Botswana, was issued in 1986 as *Guidelines for Conducting Manpower Surveys*. Related survey work was assisted in 1986 and 1987.

Preparation of teaching materials for information specialists

The *Handbook for Information Systems and Services* (1977), a compendium of knowledge in this field intended for practitioners and students is still in steady

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demand. Before 1980 there also appeared a teaching package for indexers, and guidelines on training programmes for managers, on curriculum development and on information manpower policy. During 1982 *Guidelines for Curriculum Development in Records Management and the Administration of Modern Archives* were issued. The *General Introduction to Information and Documentation Sciences* (1981) was designed as a basic self-instruction guide and is also widely used as a textbook. A guide to the production and use of audiovisual teaching aids was issued in 1985. *The Guide to Building up a Basic Collection for Library Schools* (1984) lists 900 sources. In the framework of the RAMP programme there appeared a *Model Curriculum for the Training of Specialists in Document Preservation and Restoration* (1984), *Modern Archives Administration and Records Management: A RAMP Reader* and *Model Curriculum for the Training of Archivists in Automation* (1985). As a follow-up to the 1984 colloquium on harmonization the *Guidelines on Curriculum Development in Information Technology for Librarians, Documentalists and Archivists* (1986) was published. *A Modular Programme on Information Science* (1987), is a curriculum guide, based on teaching programmes developed in Unesco projects and on discussions at several regional seminars.

Promotion of international and regional training of information personnel

At the outset there was an urgent need in the developing countries for access to international and regional courses for updating and specialization while national (or regional) training infrastructures were being reinforced. In recent years the rapid introduction of new technologies created a need for the continuing education of most information workers. The strategy has been to offer courses to meet the specific needs of specific audiences, most frequently teachers, managers of systems and services or subject specialists. Almost all the activities offered are organized under contract with international, regional or national organizations or institutions, the Unesco contribution usually covering only a portion of the total costs. Some activities have been organized with the financial and technical aid of Unesco sectors, most often the Science Sector. Unesco regional offices have frequently contributed importantly to their organization. Between 1977 and 1980 31 international or regional courses were organized in 20 countries (4 in Latin America, 3 in Africa, 10 in Asia, 1 in the Arab States and 13 in Europe) for a total of 775 participants. Subjects included new technologies, teaching methods, administration of services, indexing, networking and application of standards. A number of fellowships were provided to train teachers, and PGI gave financial support to 20 additional activities organized by other organizations, mainly NGOs. Between 1981 and 1983 32 international, regional and national courses for teachers and information specialists were organized in 22 countries for about 900 participants. Particular attention might be drawn to a series of nine-month

postgraduate courses for specialists in scientific information and documentation organized annually in France since 1974 under the sponsorship of the French National Commission and Unesco. A successful series for teachers and practitioners which covered information retrieval, computer applications and management of systems was organized at the University of Sheffield (United Kingdom). The Austrian authorities were hosts for the Sheffield course in 1983. Others included a course for teachers on thesaurus construction (Argentina, 1982), and those on archival problems in developing countries (Zimbabwe, 1982) and the automation of information services (Bulgaria, 1980). A course on information retrieval and system design, organized with the European Space Agency (ESA) and ISTIC in Beijing (1983) initiated the regular use of on-line services by Chinese information services.

The high priority assigned in Unesco's second Medium-Term Plan to socio-economic development and to information technology was reflected in the selection of themes. As the cost of organizing group activities rose and as available funds diminished, fewer activities were organized. The financial contributions of co-sponsors became increasingly important. During 1984-1987 about 40 courses and seminars were organized in 26 countries (4 in Africa, 14 in Asia, 1 in the Arab States, 12 in Europe and 8 in Latin America). They were attended by 761 participants, mainly from developing countries. Courses relating to information technology were particularly numerous and in very heavy demand in all regions and by all branches of the profession. The high cost of organizing international courses of sufficient duration to provide more than superficial practice in on-line access provoked successful experimentation during 1986 with 'travelling courses' to Kenya and Ethiopia which used a team of teachers from the University of Sheffield. Other activities included a regional seminar on records management for archivists from the South Pacific area (Australia, 1985), a regional seminar on information in the social sciences (Costa Rica, 1984) and a national course on information handling techniques (Nepal, 1986). Mention should be made of the training courses organized by the former Unesco Library, Archives and Documentation Services Division (LAD), both at Headquarters and in various parts of the world, which train in the use of CDS/ISIS software, including its micro version. At some periods these courses received financial support from PGI.

Promotion of information users education in Member States

The volume and diversity of the need and the limited resources impose concentration on developing materials and methodologies rather than on organizing activities for users. Techniques are discussed in *Education and Training of Users of Scientific and Technical Information: UNISIST Guide for Teachers* (1977). The *Guidelines for Developing and Implementing a National*

Plan for Training and Education in Information Use (1981) provide a framework, adaptable to local needs and circumstances.. A regional workshop on the marketing of information services was organized in Australia in 1983.

Activities conducted between 1984 and 1987 include guidelines for developing information consciousness in school teachers (1986) as well as a teaching package for instilling information skills in school pupils (1986). A slide-tape package to stimulate user involvement in the design, management and evaluation of data bases and information systems appeared in 1986. Guidelines on information marketing were prepared and international seminars were organized on information production and use for engineers and scientists from developing countries (France, 1986, 1987). Among regional activities were a seminar for users of medical data bases (Côte d'Ivoire, 1987), a regional workshop on training trainers in information use (Indonesia, 1985) and the information use seminars for government officials held in 12 Caribbean countries (1984) on which a teaching package was based (1985). In Colombia national and regional workshops were organized for training trainers in information use (1985, 1986).

Operational activities

A separate operational section for PGI was established in 1979. There has been a marked correlation between the principal objectives of most projects financed from extra-budgetary sources and the dominant concerns of PGI's planned programme. Projects have usually been directed to the development of user-oriented information services, the introduction of new technologies and training information specialists. Attempts were made to increase overall impact by co-ordinating the use of UNDP, funds-in-trust, participation programme and regular budgetary funds. Some notable successes in this area include the reinforcement from the regular budget of postgraduate training programmes financed by UNDP and bilateral sources. Many extra-budgetary projects originated in exploratory missions or meetings financed from the regular budget, including the participation programme.

The increased emphasis in the second Medium-Term Plan on the operational aspects of PGI's programme, especially on the development of regional networks, combined with the scarcity of regular budgetary funds, led the Intergovernmental Council at its sixth session (1986) to change its statutes to permit a search for voluntary contributions to augment the resources.

A list of the projects financed from extra-budgetary sources is given in Table III.

The participation programme is complementary to the planned activities of the regular programme. Funds are made available from the regular budget for use at the request of Member States to assist them in carrying out activities related to Unesco's programme. This source has financed a large number of

fellowships, numerous consultant missions and equipment purchases as well as national and regional seminars and meetings which have contributed significantly to the development of information infrastructures in Member States. During 1984-1985 PGI implemented 144 approved activities and during 1986-1987 there were sixty-nine.

Budgetary Period	Expenditure
1977-1978	751,000
1979-1980	932,000
1981-1983	1,148,000
1984-1985	1,278,500
1986-1987	617,000

Human and financial resources

Tables I and II hereafter summarize the resources devoted by Unesco within its regular programme and budget to PGI between 1977 and 1987. There is a steady increase through 1983. After that date the amount attributed to the programme begins to decrease significantly, in part through cuts imposed during succeeding budgetary periods which are not shown in Table I. Table III lists the projects financed by UNDP and funds-in-trust and assigned to PGI for execution during the period 1977 to 1987.

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Table I

Budget Allocations
Approved by the General Conference
for the General Information Programme
1977-1987

Budget Period	Amount	Staff Costs
	$	$
1977-1978 (19 C/5)	5,175,000	(2,509,000)
1979-1980 (20 C/5)	6,070,400	(2,762,100)
1981-1983 (21 C/5)*	11,533,400	(5,228,700)
1984-1985 (22 C/5)	8,797,000	(3,713,000)
1986-1987 (23 C/5)	6,275,300	(2,889,500)

* Three year period

Table II

Staff Posts
Approved by the General Conference
for the General Information Programme
1977-1987

Budget Period	Professional Posts	General Service Posts	Total
1977-1978 (19 C/5)	21	26	47
1979-1980 (20 C/5)	21	23	44
1981-1983 (21 C/5)	21	23	44
1984-1985 (22 C/5)	15	19	34
1986-1987 (23 C/5)	15	22	37

Table III

Extra-budgetary Projects
Assigned to PGI, 1977-1987

Region/Country	Title	Amount ($)	Dates
	United Nations Development Programme		
Africa			
Burundi	Training of Archivists (BDI/78/014)	23,000	1978-1980
Kenya	National Documentation and Information Centre (KEN/82/TOL)*	105,000	1982-1987
Malawi	National Documentation Centre (MLW/79/011)	23,000	1979-1980
Mauritania	National Library (MAU/74/010)	102,000	1977-1982
Nigeria	Information Unit, NSTDA (NIR/76/009)	201,000	1980-1985
Rwanda	Studies related to Kagera Basin Project (RWA/80/009)	93,000	1985
Senegal	Library Equipment for ENAM (SEN/75/027)	21,000	1976-1978
	National Documentation Centre for STI (SEN/75/003)	262,000	1976-1979
	Phase II (SEN/77/016)	165,000	1979-1982
	Phase III (SEN/82/015)	180,000	1982-1987
Sierra Leone	Documentation Centre on Development (SIL/82/023)	400,000	1984-1989
Somalia	National Library System (SOM/75/013)	56,000	1975-1978
	Documentation Centre for Planning Ministry (SOM/76/009)	543,000	1977-1986

* UNFSTD

Region/Country	Title	Amount ($)	Dates
Swaziland	Library Services Development (SWA/78/001)	44,000	1981-1983
Regional	Training Centre for Archivists, Ghana (RAF/72/071)	674,000	1975-1981
	Documentation Centre for Kagera Basin Organization, Rwanda (RAF/80/029)	788,000	1982-1989
Arab States			
Algeria	Development of National Library (ALG/86/033)	20,000	1986
Morocco	School of Information Sciences (MOR/74/003)	895,000	1975-1984
	Phase II (MOR/81/005)	772,000	1983-1987
	Institute for Arabization (MOR/77/001)	1,443,000	1978-1982
	Information Network (MOR/87/019)	225,000	1987-1990
Saudi Arabia	Microfilm Search Systems (SAU/80/009)	17,000	1980-1981
	Information Centre, Foreign Affairs Ministry (SAU/80/011)	1,149,000	1982-1987
	Advise for Computer Project (SAU/84/011)	375,000	1984-1988
United Arab Emirates	Abu Dhabi Cultural Centre (UAE/86/002)	13,000	1986
Sudan	National Documentation Centre (SUD/74/036)	209,000	1975-1981
P.D.R. Yemen	Documentation Centre, Planning Ministry (PDY/85/001)	195,000	1985-1988
Regional	Arab League Documentation Centre Tunis, (RAB/79/030)	2,877,000	1979-1988

Region/Country	Title	Amount ($)	Dates
Asia/Pacific			
Burma	National Archives (BUR/78/005)	866,000	1980-1988
China	Advisory Services and Training, ISTIC (CPR/85/071)	1,700,000	1982-1986
D.R.Korea	Central STI Institute (DRK/81/012)	368,000	1983-1987
India	Information Systems, Public Administration (IND/79/020)	2,000	1979-1980
	Water and Power Information System (IND/74/029)	808,000	1982-1988
Indonesia	Scientific Information Network (INS/74/029)	571,000	1975-1981
	University Library Development (INS/78/057)	86,000	1979-1984
	Professional Staff Training in STI (INS/81/007)	500,000	1981-1987
R. of Korea	Scientific Databank (ROK/77/009)	46,000	1978-1981
Laos	National Documentation and Information Centre (LAO/81/015)	289,000	1982-1988
Nepal	Archival Scientist (NEP/70/009)	99,000	1973-1978
	Science and Technology Information Network (NEP/85/044)	50,000	1987-1988
Philippines	National Scientific Information System (PHI/79/018)	294,000	1981-1987
Sri Lanka	Centre for Development Information (SRL/78/030)	162,000	1979-1985
	Centre for STI (SRL/77/004)	356,000	1978-1983
Tuvalu	Archives and Librarianship Training (TUV/78/003)	12,000	1978-1980
Viet Nam	Scientific, Technical and Economic Information (VIE/80/045)	1,209,000	1982-1988

Region/Country	Title	Amount ($)	Dates
Regional	Postgraduate Course, Science Information, Philippines (RAS/75/034)	968,000	1978-1985
	Information Support, Asean Secretariat (RAS/78/038)	71,000	1979-1982
	Databank for Non-Aligned Countries (RAS/79/138)	79,000	1981-1983
Europe			
Greece	National Documentation Centre (GRE/77/028)	292,000	1978-1986
Hungary	Scientific and Technical Information System (HUN/82/007)	321,000	1982-1987
	Scientific and Technical Data Bases and User Training (HUN/86/002)	170,000	1987-1990
	Model System for Information Services (HUN/87/010)	225,000	1987-1991
Romania	STI on Video-Cassettes (ROM/80/002)	15,000	1981-1982
Yugoslavia	Computer-Supported Information System (YUG/86/002)	89,000	1986-1987
Regional	Cross-border Data Exchange in STI (RER/79/006)	53,000	1982-1985
	INTERNET: STI Network (RER/87/020)	25,000	1987-1988
Latin America			
Argentina	Libraries Development, CONICET (ARG/85/014)	545,000	1986-1987
Haiti	Documentation and Archives Centre (HAI/78/007)	11,000	1978-1979
Trinidad & Tobago	Archivist (TRI/86/002)	304,000	1986-1989
Venezuela	National Library and Information System (VEN/77/009)	105,000	1977-1980

Region/Country	Title	Amount ($)	Dates
Regional	Regional Adviser, Libraries and Information (RLA/70/538)	169,000	1971-1978
	Postgraduate Programme, Information Sciences (RLA/83/020)	112,000	1984-1988
Interregional			
	Analytical Case Studies on STI (GLO/81/TOL)*	82,000	1981-1983
	Funds-in-Trust		
Africa			
Burkina Faso	Ouagadougou University Library (505-BKF-81)	203,000	1981-1986
Zimbabwe	Rural Cultural Centres/Libraries (508-ZIM-84)	269,000	1983-1985
Arab States			
Iraq	Computerization of Scientific Documentation Centre (909-IRQ-84)	2,465,000	1983-1988
Morocco	Institute for Arabization (924-MOR-84)	830,000	1982-1987
Regional	Arab Gulf States Folklore Centre (927-RAB-84)	200,000	1985-1987
Asia/Pacific			
Indonesia	Associate Expert, Jakarta (801-INS-84)	59,000	1984-1986
Latin America			
Nicaragua	Information Retrieval and Database (516-NIC-84)	53,000	1987-1988
Venezuela	Electrification Caroni Basin, Information (905-VEN-80)	7,000	1981-1984
Regional	Associate Expert, Caracas (801-RLA-84)	32,000	1984-1985

* UNFSTD

Region/Country	Title	Amount ($)	Dates
Interregional			
	Conversion CAN/MARC entries to CCF format (Programme for International Bureau of Education, Geneva - IBE) (531-INT-84)	10,000	1987

Relations of the programme with other competent international agencies

United Nations system

From the outset PGI co-operated with the United Nations and a number of its agencies in the framework of UNISIST, with a view to improving methods of information handling and harmonization of education and training activities. Unesco had a special mission within the United Nations family in the area covered by the General Information Programme. The useful conceptual framework of UNISIST had been recognized by the ECOSOC Committee on Science and Technology for Development at its third session (1976) and Unesco's role in the transfer of scientific and technological information was cited by the General Assembly of the United Nations at its thirty-first session. Many activities executed in co-operation with units of the United Nations system have been mentioned.

Unesco was active in the United Nations Inter-Agency Task Force on Information Systems which gave preliminary thought to the concept of a global information network. The United Nations Environmental Programme (UNEP) invited Unesco to have PGI participate in an evaluation of its referral system, INFOTERRA, which was carried out in 1980 by a team with methodological support from Unesco. Unesco had earlier undertaken, at the request of FAO, the organization of an independent appraisal of its information system, AGRIS, which was completed in 1977.

Unesco sought to co-operate with the United Nations Inter-Organizations Board for Information Systems (IOB), which aimed to develop and co-ordinate inter-organization management information systems in the United Nations family. The signature of an agreement in 1977 led to a joint IOB/UNISIST programme promoting the application of UNISIST guidelines.

methods and standards within the United Nations family and the harmonious development of their specialized systems. But there was need for a clear demarcation of functions to prevent duplication of effort. Unesco took part in inter-agency working groups set up by the Administrative Committee on Co-ordination (ACC) to consider the replacement of IOB by the Advisory Committee on the Co-ordination of Information Systems (ACCIS). The main programme objective of the new body was to meet the needs of Member States for United Nations information. Tools were needed to improve infrastructures within the United Nations system and to facilitate access. Segments of the work were delegated to technical panels of specialists from the organizations concerned under the leadership of a lead agency.

In this framework, and in pursuance of the recommendation of the United Nations Conference on Science and Technology for Development (UNCSTD, Vienna, 1979) that a Global Network of Scientific and Technological Information be established, Unesco presided over a working group set up in 1982 to identify joint activities to be carried out with a view to the establishment of the future network. Related action undertaken by PGI in pursuit of this goal is mentioned under Subprogramme VII.1.3. The Unesco view is that a global network must be based on solid national and regional structures. Unesco participates through co-operative projects with other agencies and through activities which strengthen national and regional information infrastructures. At an Ad Hoc Panel of Specialists on Scientific and Technological Information Systems for Development (Rome, 1985) convened by the Advisory Committee on Science and Technology for Development, a subsidiary organ of the United Nations Intergovernmental Committee on Science and Technology for Development, the panel agreed that the development of a global network should become a means of strengthening services and networks and establishing the intersectoral linkages needed to increase their usefulness and effectiveness for developing countries. UNISIST could play a role in filling the need for a strong and permanent international programme geared towards assisting and supporting the formulation of information policies, infrastructures and education and training.

The findings of the study, conducted at the request of the Intergovernmental Committee on Science and Technology for Development at its seventh session (1985), regarding the transformation of INFOTERRA (UNEP's International Referral System for Sources of Environmental Information) into an early stage (Referral) of the Global Network will determine in what way Unesco, through PGI, may contribute.

PGI continued to foster the harmonization of information handling and transfer procedures within the United Nations system through its representation of Unesco at the meetings and in the activities of the Advisory Committee on the Co-ordination of Information Systems (ACCIS).

International non-governmental organizatio.

PGI maintains harmonious relationships with many non-governmental organizations and has benefited greatly from their co-operation and contributions. Organizations active in PGI's areas of competence which have established formal relationships with Unesco are associated with the elaboration of successive PGI programmes. At the level of planning and execution of activities, co-operation with the following has been of sustained importance: the International Committee for Social Science Information and Documentation (ICSSD); the International Council of Scientific Unions (ICSU) and its specialized bodies including the Committee on Data (CODATA); the International Council on Archives (ICA); the International Federation for Information and Documentation (FID); the International Federation for Information Processing (IFIP); the International Federation of Library Associations and Institutions (IFLA); the International Group of Scientific, Technical and Medical Publishers (STM); the International Publishers Association; and the World Federation of Engineering Organizations (WFEO). The Intergovernmental Council at its sixth session (1986) charged its Bureau with beginning a review of the work programmes of selected non-governmental organizations to further improve co-operation with PGI.

Results of evaluation efforts undertaken

PGI's programme as a whole has been regularly examined and evaluated by the Intergovernmental Council which at each session considers programme execution and results on the basis of the reports of its Bureau and the documentation prepared by the Secretariat. An example is that prepared for the third session of the Council, *Evaluation of Activities Carried Out under Objective 10.1 of the Medium-Term Plan in 1977-1978 and 1979-1980*. Member States regularly contribute through their frequently detailed replies to questionnaires sent by the Director-General in connection with preparation of successive programmes. They also participate in discussions on PGI's programme at sessions of the General Conference and Unesco's Executive Board. The generally supportive tone of these comments has frequently been noted.

More detailed and structured evaluation is conducted by the advisory groups convened by Unesco periodically to assess the effectiveness of particular facets of the programme such as education and training or the work in standardization.

Another level of evaluation is applied to individual activities of which a large proportion are analysed in written reports. These are regularly prepared by those responsible for training activities, for advisory missions, or by the panels of experts convened to assess results of particular pilot projects or other

activities. The structure of these reports is frequently guided by tools prepared within the programme such as the guidelines for training courses, workshops and seminars or those for evaluation of information systems and services. These reports provide lessons for the preparation of subsequent activities.

Analysis of difficulties and shortfalls encountered

The formation of PGI by the fusion of two separately conceived programmes created initial difficulties, soon overcome, in identifying common lines of development. Some members of the scientific community have regretted the shift of the UNISIST programme from its former base in the Science Sector, but following their periodic reviews of programme achievements, the General Conference of Unesco, its Executive Board and the Intergovernmental Council have repeatedly expressed satisfaction with the merger of the programmes and the creation in the General Information Programme of a single focus for the information activities of Unesco.

PGI has on the one hand been called on to expand its programme to include new areas and on the other to concentrate on a smaller number of tasks. PGI had determined shifts in areas of priority to correspond with the evolution in Unesco's overall objectives (i.e. increased emphasis on science and technology; increased attention to regional co-operation) and the information environment (i.e. wide interest in the applications of new technologies) while preserving the continuity of main programme elements. In order to achieve an 'appropriate balance' between information, library and archives activities. This aspect of programme planning was eased by the growing concern throughout the information communities with global problems of information organization, distribution and access and some diminution of emphasis on the narrowly sectoral interests of individual professional groups.

There is a persistent feeling that PGI's activities and documents are insufficiently known in Member States. The Intergovernmental Council at its sixth session (1986) requested the Secretariat to explore all possible ways and means to largely diffuse these documents so that they reach the largest possible number of users around the world.

PGI's contribution in fields including promotion of information policy formulation and development of national infrastructure and training programmes is mainly catalytic and because of limited resources can seldom be sustained. Success or failure ultimately depends on the strength of national or regional commitments. The scale of need and of demand in Member States is such that it is possible to achieve only a relative concentration of resources.

In recent years, challenges have included adaptation to developments in modern technology for information handling and networking, the widening gap between developed and developing countries in this field and the increas-

ing need for assistance to the latter in relation to the limited resources of the programme. Relatively large projects such as the regional co-operative schemes and networks (VII.1.3), the Alexandrian library and projects in priority areas such as conservation and preservation and training and education are heavily dependent on extra-budgetary funding. This is difficult to obtain from funding sources where information-related projects are often not perceived as a priority area. Unesco's General Conference at its twenty-third session assigned a new function to PGI's Intergovernmental Council, that of mobilizing extra-budgetary funds to supplement the regular programme budget of PGI.